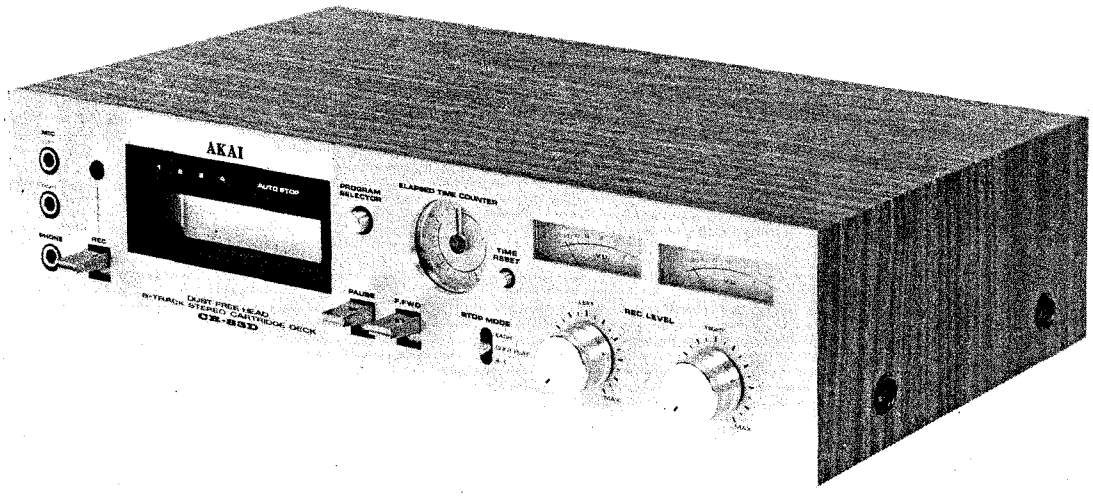
SERVICE MANUAL

PARTS LIST

MODEL CR-83D

AKAI



CARTRIDGE STEREO TAPE DECK

MODEL CR-83D

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SECTION 1

SERVICE MANUAL

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL OPERATING PRINCIPLES AND ADJUSTMENTS.

I. TECHNICAL DATA

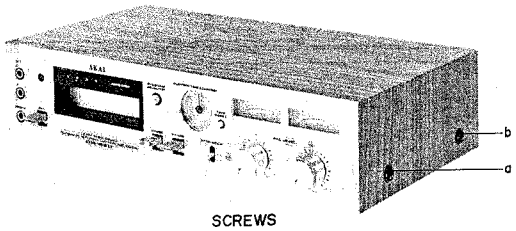
TRACK SYSTEM	8 track 2 channel stereo system
TAPE SPEED	3–3/4 ips
WOW AND FLUTTER	Less than 0.15% WRMS
FREQUENCY RESPONSE	60 to 14,000 Hz(±3 dB) using Low Noise Tape
DISTORTION	Less than 2% (1,000 Hz "0" VU)
SIGNAL TO NOISE RATIO	Better than 48 dB (measured via tape with peak recording level of +6 VU)
BIAS FREQUENCY	85 kHz
HEAD	Combination REC-PB/Erase Head
MOTOR	DC Motor
FAST FWD. TIME	4 Min using a 2000 ft tape
OUTPUT JACKS	Line (2): 0.755V("0"VU) Required load Impedance: More than 20 k ohms Phone (1): 30 mV/8 ohms
INPUT JACKS	Microphone (2): 0.7 mV/Required microphone Impedance: 600 ohms Line (2): 70 mV/680 k ohms
TRANSISTOR	2SC458LG(C)(P) . . . . . 4 2SC945L(P)(Q) . . . . . 11 2SC711(E)(F) . . . . . 4 2SC1449(K)(L)(M) 3
DIODE	1N34A . . . . . 2 YZ240(B) . . . . . 1 10D1 . . . . . 3 WZ145 . . . . . 1 10D05 . . . . . 1 SEL303E 4 1S2473VE 9
POWER REQUIREMENTS	CSA, UL and LA Models: 120V, 60 Hz only CEE Models: 220V, 50 Hz only Other Models: 110 to 120V, and 220 to 240V, 50/60 Hz (Switchable)
DIMENSIONS	420(W)x110(H)x245(D) mm (16.5" x 4.3" x 9.6")
WEIGHT	5.3 kg (11.7 lbs.)

NOTE: For improvement purposes, specifications and design are subject to change without notice.

II. DISMANTLING OF UNIT

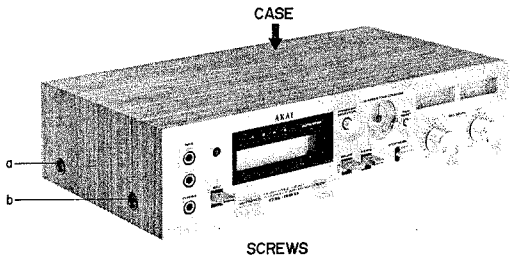
In case of trouble, etc. necessitating disassembly, please disassemble in the order shown in photographs. Reassemble in reverse order.

1



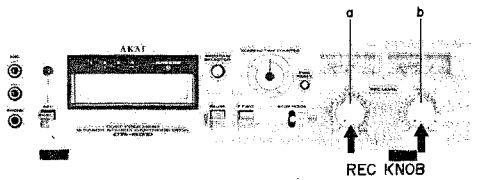
SCREWS

2



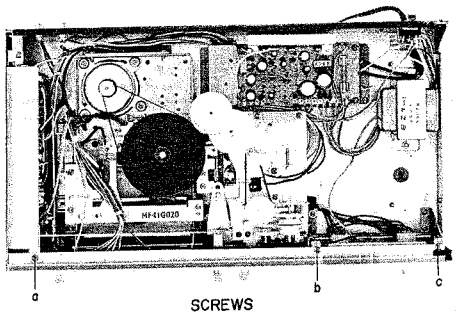
SCREWS

3



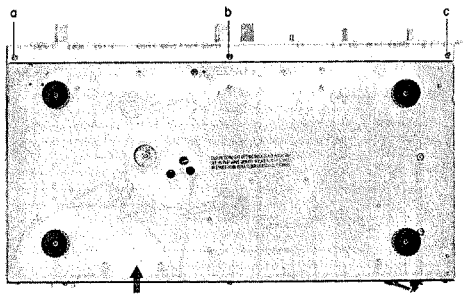
REC KNOB

4



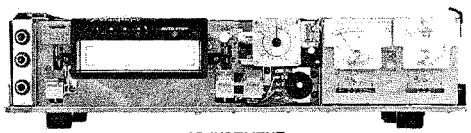
SCREWS

5



BOTTOM PLATE SCREWS

6



ADJUSTMENT

III. PRINCIPAL PARTS LOCATION

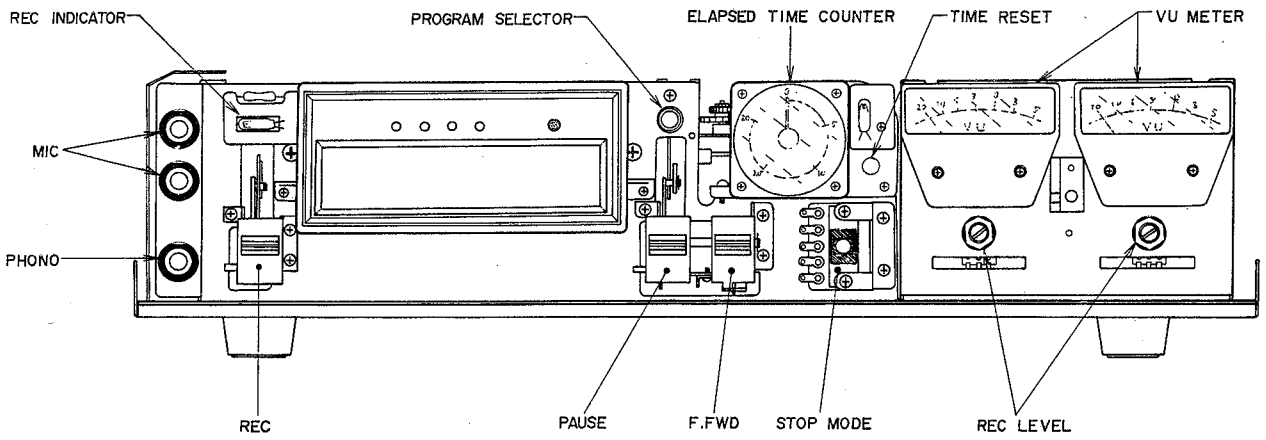


Fig. 1 Front View

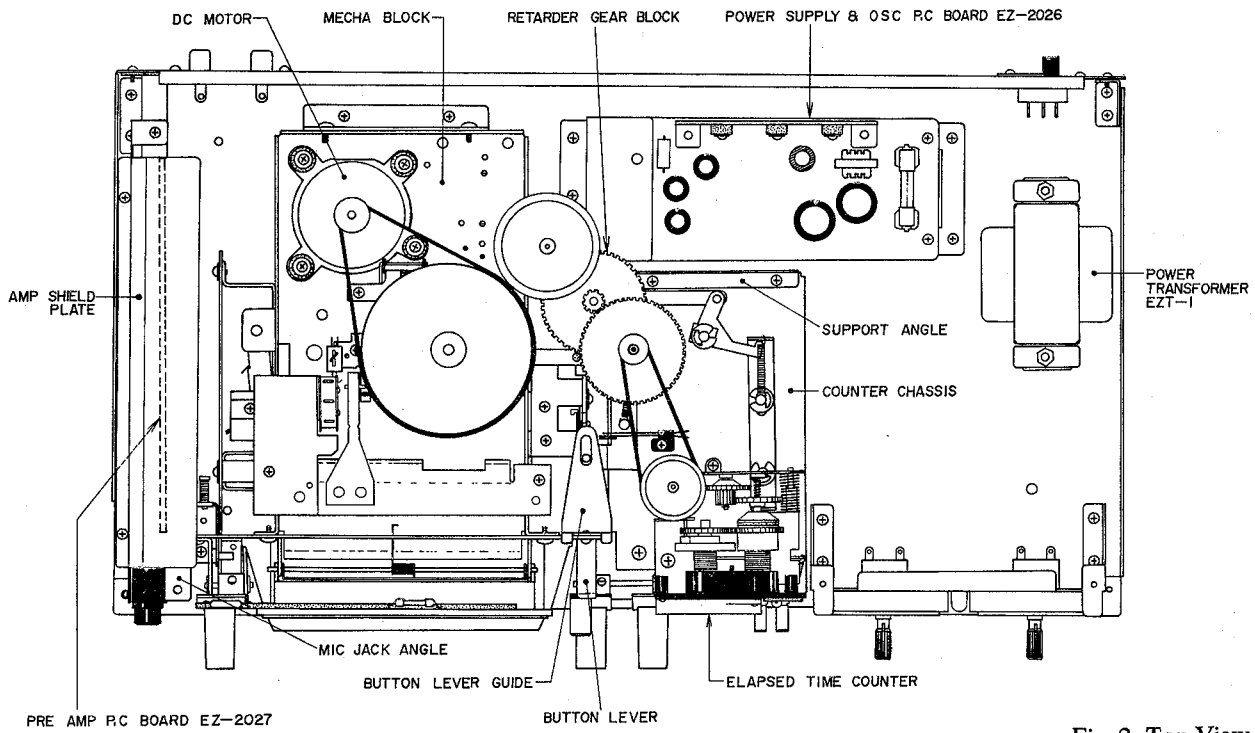


Fig. 2 Top View

IV. MECHANISM ADJUSTMENT

1. RESET SLIDE LOOSE PLAY ADJUSTMENT

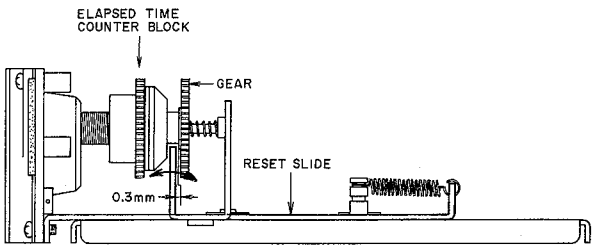


Fig. 3

As shown in Fig. 3, adjust by bending reset slide so that a gap of 0.3 mm is obtained between the reset slide and gear.

2. LEAF SWITCH INSTALLATION ANGLE ADJUSTMENT

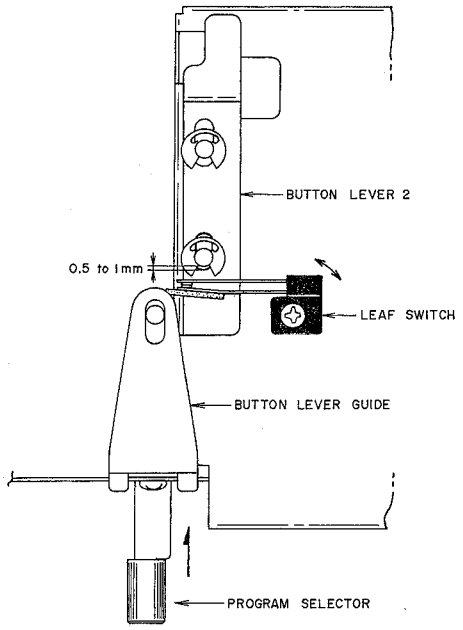


Fig. 4

Adjust the leaf switch as indicated by the arrow mark in Fig. 4 so that when the program selector is depressed it makes contact with the leaf switch at 0.5 to 1 mm before full depressed position is reached.

3. SWITCH DETECTOR PLATE INSTALLATION POSITION ADJUSTMENT (Refer to Fig. 5)

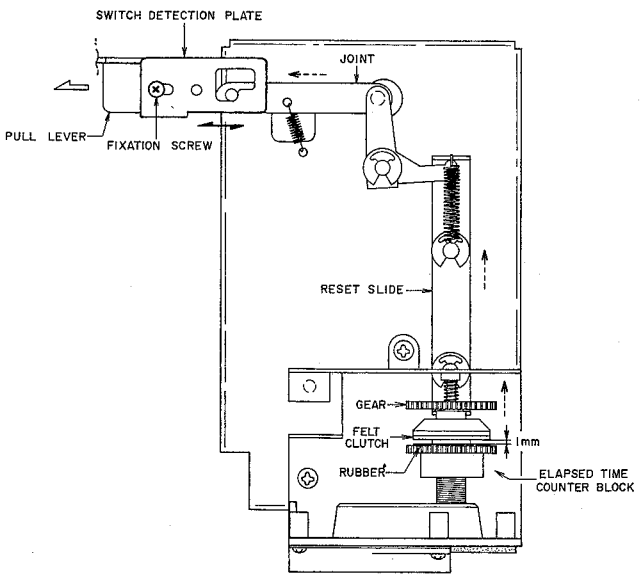


Fig. 5

Adjust installation position of switch detection plate so that when the Pull Lever which is interconnected to the Program Switch Plunger is moved as far as they will go in the direction of the arrow mark in the figure, the space between the felt clutch and rubber is 1 mm.

V. HEAD ADJUSTMENT

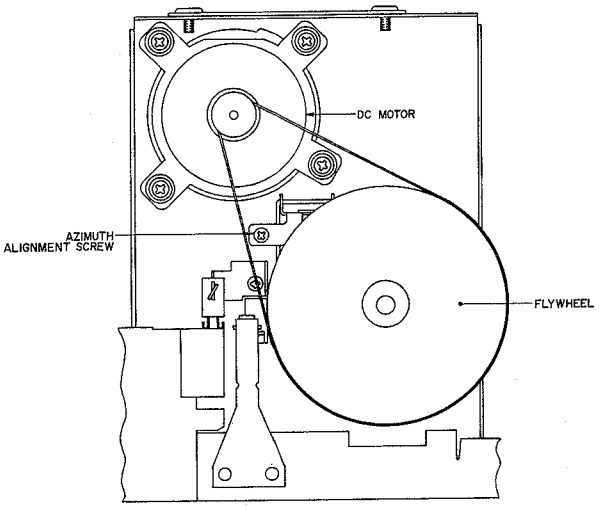


Fig. 6 Azimuth Alignment Adjustment

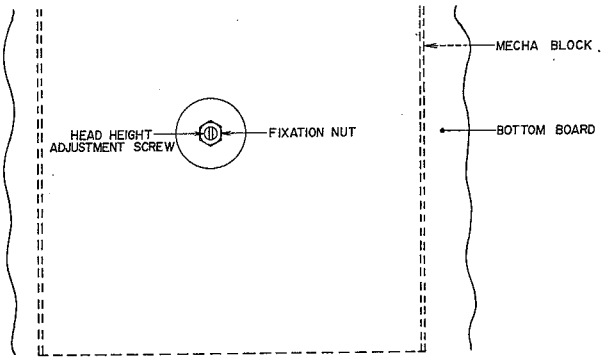


Fig. 7 Head Height Adjustment
(Adjust from bottom side of deck)

1. AZIMUTH ALIGNMENT ADJUSTMENT (Refer to Fig. 6)

1) Playback Program 3 of an 8,000 Hz pre-recorded test tape.
2) Adjust Azimuth Alignment screw to obtain maximum line output.

2. COMBINATION HEAD HEIGHT ADJUSTMENT (Refer to Fig. 7)

1) Playback Program 2 of test tape.*
2) Adjust Head Height Adjustment screw to obtain minimum line output and tighten fixation nut at that position.

* Test Tape
Various tape programs for making head height and cross talk adjustments are as follows:

PROGRAM 1	1,000 Hz
PROGRAM 2	Blank
PROGRAM 3	1,000 Hz
PROGRAM 4	3,000 Hz

VI. HEAD REPLACEMENT METHOD

NOTE: When replacing the combination head, because there are two different types, depending, upon the lot number, please be sure to check for the correct type.

1) Proceed in the following order for machines with these serial numbers: (Refer to Fig. 2)

#01117-0001 to 01117-0060
#10218-0001 to 10218-0500
#10317-0001 to 10317-1000

(1) Remove the two Knobs and 6 screws and take out panel.
(2) Remove the two holding screws from the Support Angle installed on the Counter Chassis.
(3) Remove Button Lever Guide holding screw and take out Button Lever Guide.
(4) Remove Button Lever.
(5) Remove spring from Button Lever.
(6) Remove the two holding screws and take out Counter.
(7) Remove the two holding screws and take out Counter Chassis.
(8) Remove the three holding screws and take out Amp Shield Plate.
(9) Remove the holding screw and take out Mic Jack Installation Angle.
(10) Remove the five holding screws and take out Mecha Block.
(11) Remove the screws from reverse side of Mecha Block and take out Flywheel.

2) For serial No.10520-0001 and all machines there after, proceed as follows:

Remove the fixation screws shown in Fig. 8 which are accessible through the 3 holes on the center part of Bottom Plate and take out flywheel.

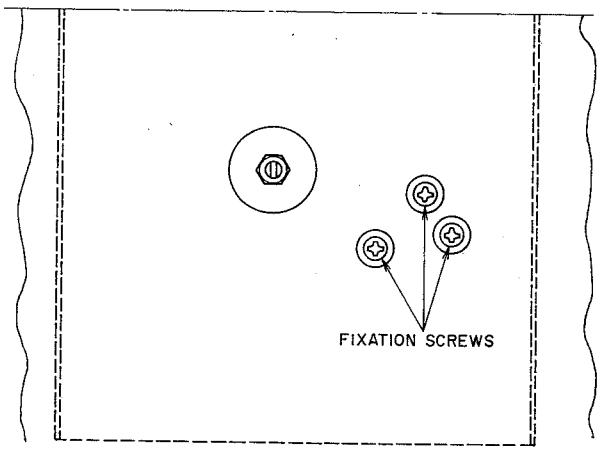


Fig. 8 Bottom Side

VII. AMPLIFIER ADJUSTMENT

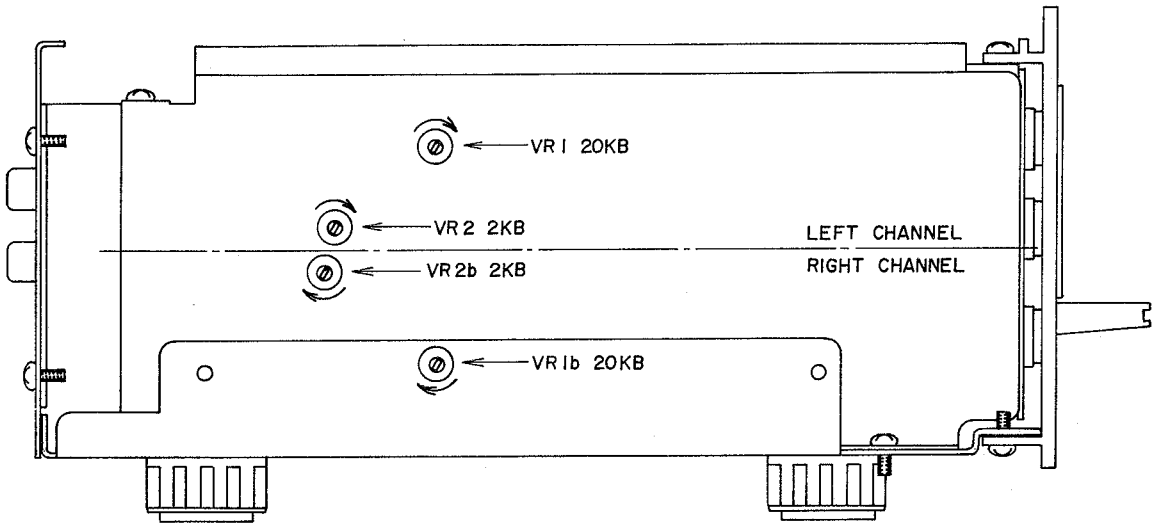


Fig. 9 Amplifier Adjustment

Step	Adjustment Item	Test Tape Supply Signal	MODE	Adjustment Point	Result	Remarks
1	Playback Level	500 Hz 0 VU Test Tape	PLAY	VR1 20 kB	0 ±0.5 dB (0.775V)	See NOTE
2	Recording Level	Blank Tape 1,000 Hz 0 VU Recording	REC/ PLAY	VR2 2 kB	0 ±1.0 dB (0.775V)	

Chart–1

NOTE: Playback level of Program 1 and Program 4 is 0 ±0.5 dB

VIII. DC RESISTANCE OF VARIOUS COILS

Part	Designation	DC Resistance
OSC Coil	OT-204	Between 1–3: 0.3 ohms Between 4–6: 0.7 ohms Between 7–9: 8.2 ohms
Choke Coil	N16-535S	568 ohms
Solenoide SL1		20 ohms
Headphone Transformer	S14-123S	Primary: 282 ohms Secondary: 2.5 ohms
Rec-PB/Erase Head		Rec-PB Head: 290 ±5 ohms Erase Head: 75 ±5 ohms

Chart–2

IX. CLASSIFICATIONS OF VARIOUS P.C BOARDS

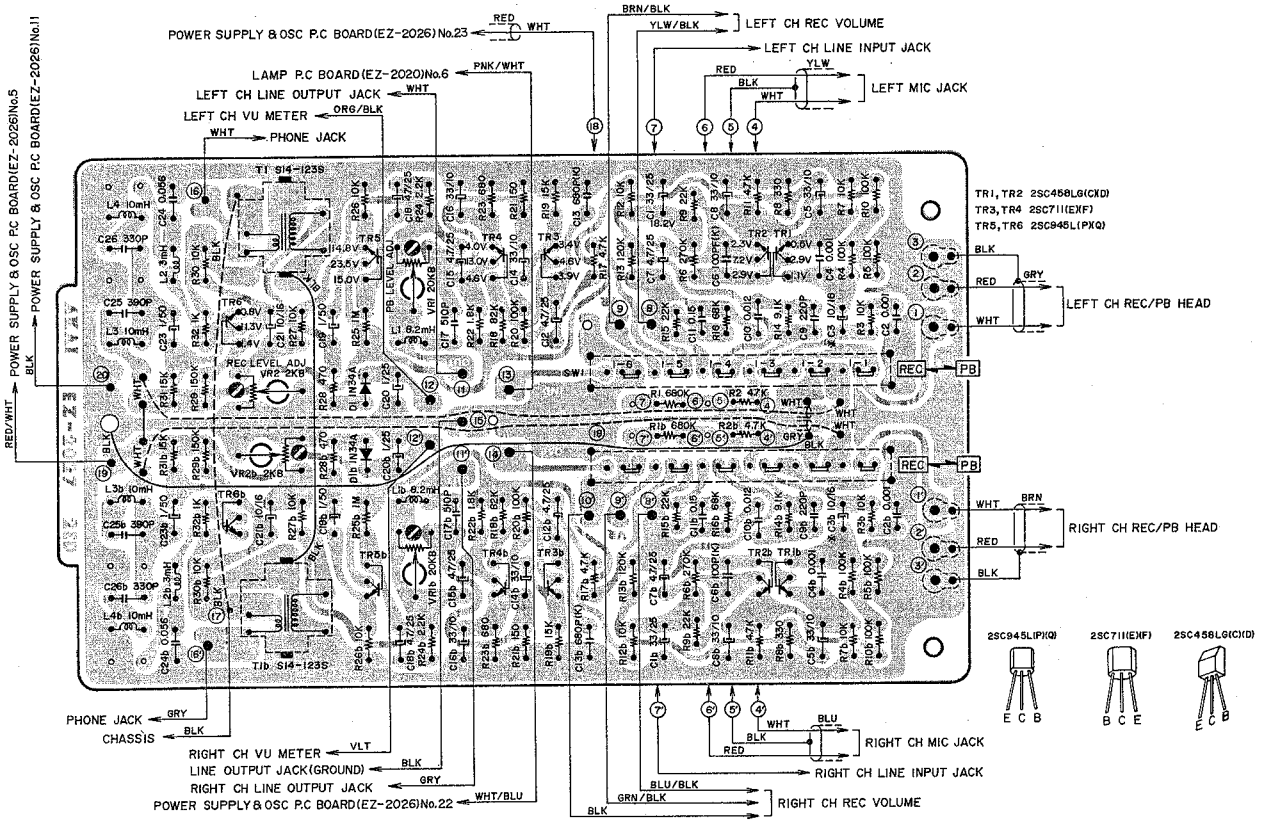
1. RELATION OF P.C BOARD TITLE AND NUMBER

P.C Board	Number of P.C Board
Pre Amp P.C Board	EZ-2027
Power Supply & OSC P.C Board	EZ-2026
Lamp P.C Board A	EZ-2020
Lamp P.C Board B	EZ-2002
Selector P.C Board	EZ-1012

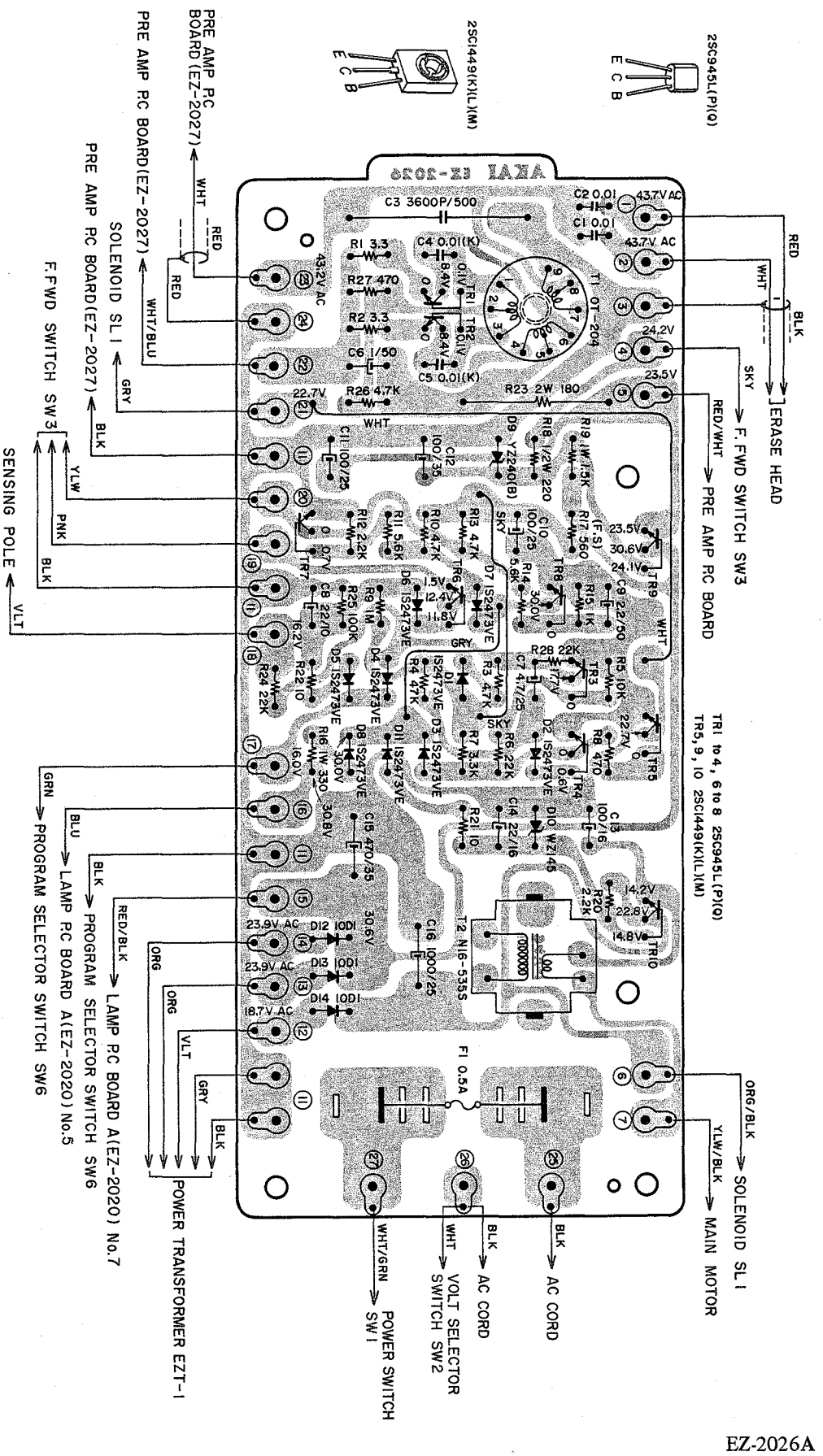
Chart–3

2. COMPOSITION OF VARIOUS P.C BOARDS

1) PRE AMP P.C BOARD EZ-2027

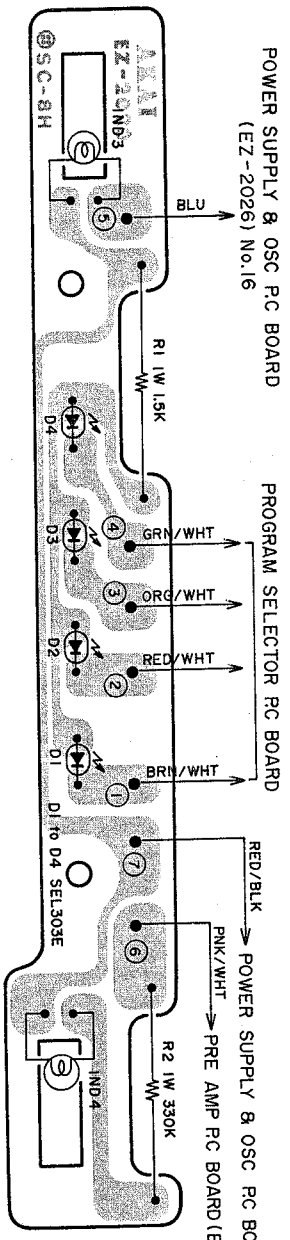


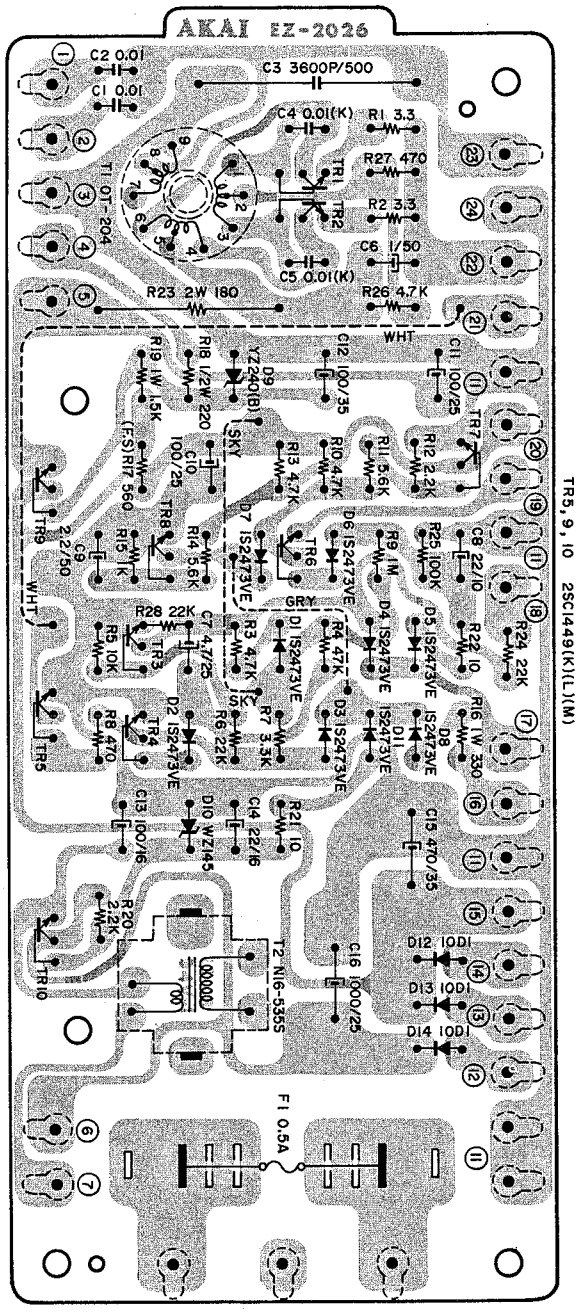
2) POWER SUPPLY & OSC P.C BOARD



EZ-2026A

3) LAMP P.C BOARD A EZ-2020





EZ-2026B

SECTION 2

PARTS LIST

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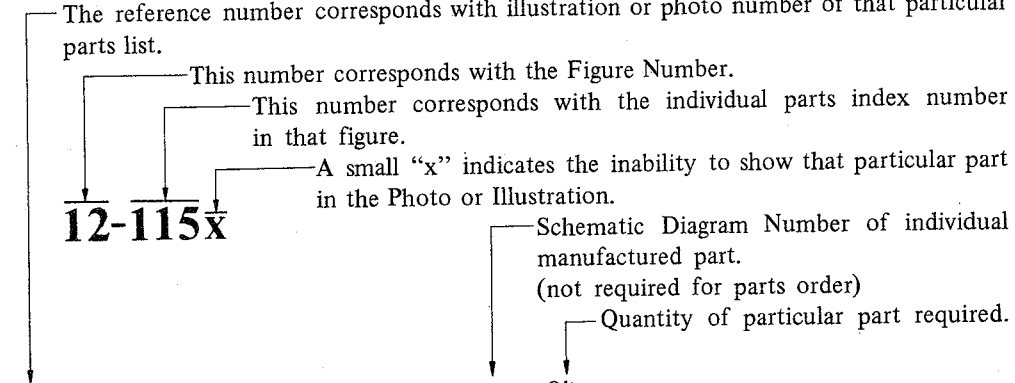
2. SPEED REDUCING GEAR BLOCK 21
3. MECHA ASSEMBLY BLOCK 23
4. P.C BOARDS 23
(1) AMP P.C BOARD (EZ-2030) BLOCK 23
(2) POWER SUPPLY & OSC P.C BOARD (EZ-2026) BLOCK 23
5. ASSEMBLY BLOCK 25
6. FINAL ASSEMBLY BLOCK 26
7. LIST OF INTERCHANGEABLE SEMICONDUCTORS 27
INDEX 28

Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

HOW TO USE THIS PARTS LIST

1. This parts list is compiled by various individual blocks based on assembly process.
2. When ordering parts, please describe parts number, serial number, and model number in detail.
3. How to read list.


The reference number corresponds with illustration or photo number of that particular parts list.
This number corresponds with the Figure Number.
This number corresponds with the individual parts index number in that figure.
A small "x" indicates the inability to show that particular part in the Photo or Illustration.
12-115x
Schematic Diagram Number of individual manufactured part.
(not required for parts order)
Quantity of particular part required.

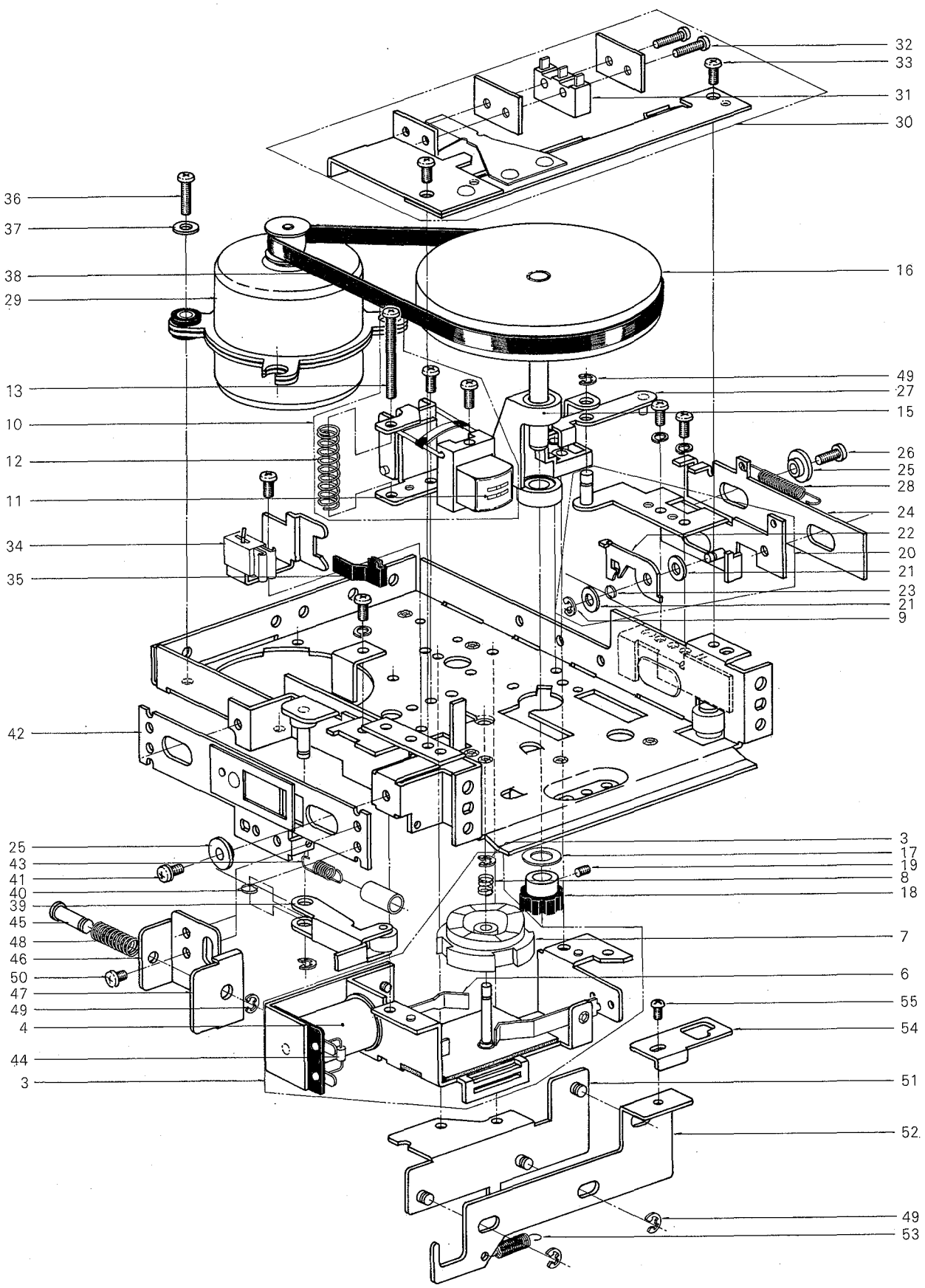
Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		FLYWHEEL BLOCK #13		
12-115x	800425	Flywheel Block Assy. Comp.	RDG #13	1
12-116	244506	Flywheel Only	RD-233	1
12-117x	244754	Felt, Flywheel	RD-275	1
12-118	251324	Main Metal Case	RD-236	1
12-119	253080	Main Metal	RD-237	1

4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of components of the Schematic Diagram or Service Manual.
5. The indications of Resistors and Capacitors in the photos of P.C. Board are being eliminated.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.
   It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

RECOMENDED SPARE PARTS LIST

Parts Nomenclature	Parts No.
Solenoid Coil Comp. CR-83D	BZ720527
Plunger Comp. CR-83D	BZ720540
Clip & Cam Comp. CR-83D	BZ720551
REC/ERASE HEAD CR-83D	HR720595
Main Case Comp. CR-83D	BZ720630
Flywheel & Shaft Comp. CR-83D	BF720641
Drive Cam Roller. CR-83D	MR720663
DC Motor Block Comp. CR-83D	BM720786
Micro SW. SS-5GL 250V/3A. CR-83D	ES720808
Drive Belt 0.65x6x90. CR-83D	MB720876
Silicon Diode 10D2	ED224548
Idler 1	MI677880
Idler 2	MI677878
Counter Operating Pulley	MR677610
Elapse Counter	MC677283
Detector Belt	MB630404
Leaf SW. BSW-IF TX	ES592964
Mouth, w/lamp lens B-3	MZ677823
Push SW. SUE12	ES677351
Function Lever C	ML645377
Function Lever E	ML645333
Function Lever D	ML645322
Shutter	MZ677430
Shutter Spring	ZG677441
Lever SW. SLE54305	ES677305
Push Button Knob 1 2-9-158	SK631304
Amp P.C Board Comp. EZ-2030	BA680152
Transistor 2SC458LG(C)(D)	ET391768
Transistor 2SC711(E)(F)	ET453486
Transistor 2SC945L(Q)(P)	ET639437
Germanium Diode 1N34A	ED219464
Semi-Fixed/Vol. V8K4-1 20 kB	EV522797
Semi-Fixed/Vol. V8K4-1 2 kB	EV464196
Power Supply & OSC P.C Board Comp. EZ-2026	BA680106
Silicon Diode 1S2473 VE	ED560913
Zener Diode YZ-240(B)	ED554027
Zener Diode WZ-145	ED227812
Silicon Diode 1S2473 VE	ED560913
Silicon Diode 10D1	ED224526
Transistor 2SC1449(K)(L)(M)	ET635815
Circular Foot A, w/rubber	SZ645243
Power Trans. EZT-1	BT677250
Power Trans. EZT-2	BT677261
VR Meter 85C257	EM677327
Rear Panel A	SP677970
Rear Panel C (CSA)	SP677992
Rear Panel B (JPN)	SP677981
Slide SW. S-1	ES479485
Front Panel Block Comp. CR-83D	BZ680207
Button Escutcheon A	SF613888
Button Escutcheon D	SF631585
Single Knob	SK631056
Case 1	BC677968

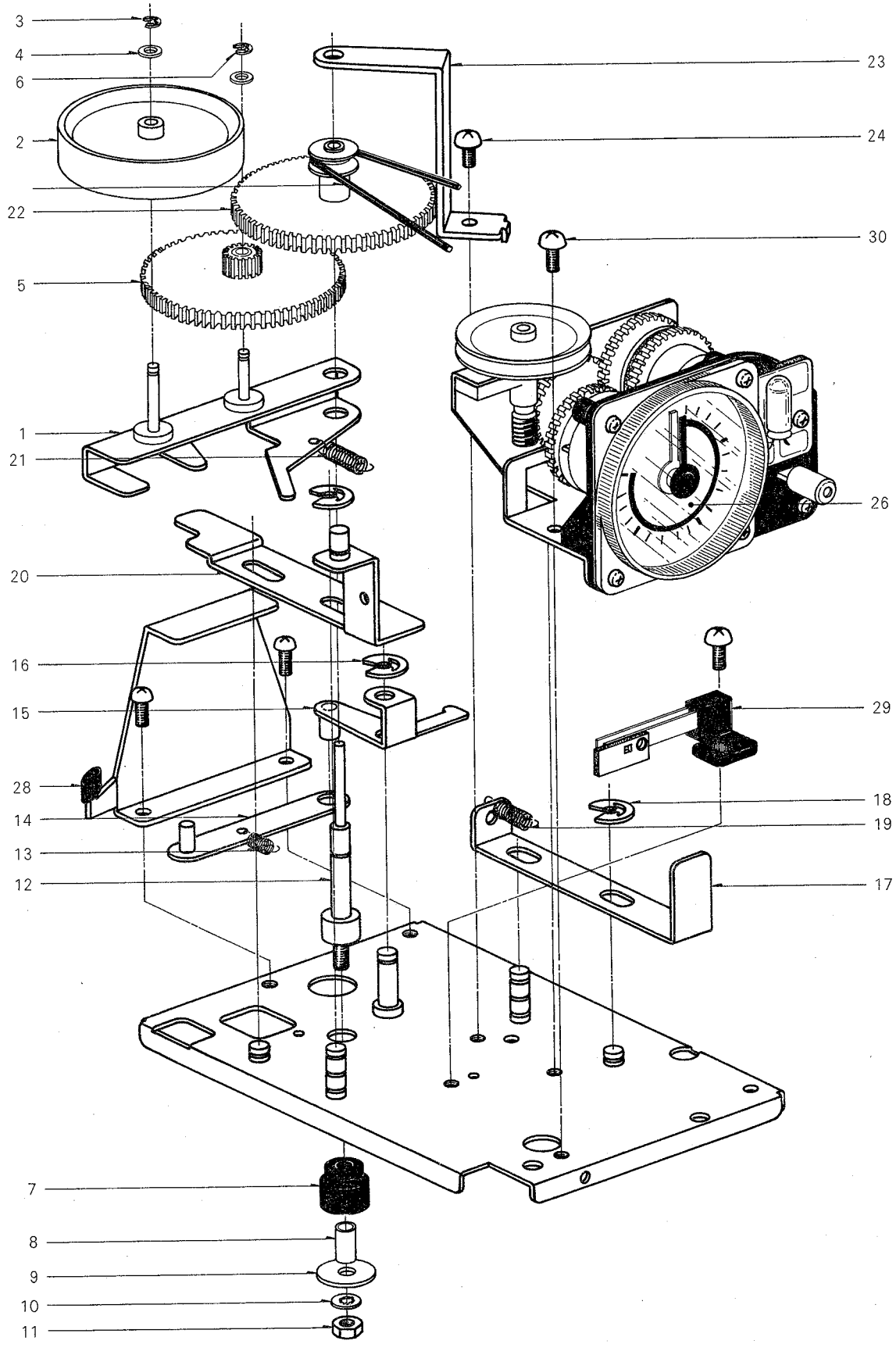
1 ILLUSTRATION OF MECHANISM BLOCK



1) MECHANISM BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
1-1x	ZG720494	Delatch Spring. CR-83D	41C40252J01	1
1-2x	ZG720505	Slide Spring. CR-83D	41C40253J01	1
1-3	BZ720516	Cam & Solenoid Block Comp. CR-83D	1V43200J89	1
1-4	BZ720527	Solenoid Coil Comp. CR-83D	1V40800J28	1
1-5	ZG720538	Solenoid Spring. CR-83D	41C40294J02	1
1-6	BZ720540	Plunger Comp. CR-83D	1V42700J35	1
1-7	BZ720551	Clip & Cam Comp. CR-83D	1V42700J37	1
1-8	ZG720562	Cam Spring. CR-83D	41C40277J01	1
1-9	ZW720573	'E' Ring. CR-83D	4C40246A08	2
1-10	BZ720584	Head & Bracket Block Comp. CR-83D	1V41200P75	1
1-11	HR720595	REC./ERASE Head. CR-83D	88C40187P01	1
1-12	ZG720606	Azimuth Spring CR-83D	41C40797J01	1
1-13	ZS720617	Screw, Pan Head 3x28. CR-83D	3S40011G53	1
1-14x	ZG720628	Head Tension Spring. CR-83D	41C40243J01	1
1-15	BZ720630	Main Case Comp. CR-83D	1V40800J38	1
1-16	BF720641	Flywheel & Shaft Comp. CR-83D	49C40291J02	1
1-17	ZW720652	Washer 0.25x6.5x12. CR-83D	4C40074G01	1
1-18	MR720663	Drive Cam Roller. CR-83D	53B44395J01	1
1-19	ZS720674	Set Screw 3x4 CR-83D	3S40015G01	2
1-20	TR720685	Pause Lever MT. Plate Comp.	1V40500J17	1
1-21	ZW720696	Washer 0.5x3.3x8.0. CR-83D	4A41203G01	1
1-22	TR720707	Pause Cam. CR-83D	45B40546J01	1
1-23	ZG720718	Cam Spring. CR-83D	41A40539J01	1
1-24	BL720720	Pause Lever A Comp. CR-83D	1V41200J94	1
1-25	TR720731	Spacer. CR-83D	43A40541J01	4
1-26	ZS720742	Tap Tite Screw 3x8. CR-83D	3A44205G03	4
1-27	BL720753	Pause Lever B Comp. CR-83D	1V40500J19	1
1-28	ZG720775	Pause Spring	41A40540J01	1
1-29	MB720786	DC Motor Block Comp. CR-83D	59C40067J04	1
1-30	BZ720797	Hold Down Bracket Comp. CR-83D	1V42000J76	1
1-31	ES720808	Micro SW. SS-5GL 250V/3A. CR-83D	40C40349J02	1
1-32	ZS720810	Screw, Pan Head 2.3x12. CR-83D	3S40011G52	2
1-33	ZS720821	Tap Tite Screw 3x6. CR-83D	3A44205G01	10
1-34	BZ720832	Tape Guide & SW. Comp. CR-83D	1D40285J06	1
1-35	TR720843	Tape Stopper. CR-83D	46B43168J01	1
1-36	ZS720854	Tap Tite Screw 3x12. CR-83D	3A44205G08	4
1-37	ZW720865	Washer, Flat Metal 0.5x3.3x8.0. CR-83D	4S40070G05	4
1-38	MB720876	Drive Belt 0.65x6x90. CR-83D	42B40286J01	1
1-39	BZ720887	Roller Holder Bracket Comp. CR-83D	1V41200J35	1
1-40	ZG720898	Roller Tension Spring. CR-83D	41C41256J01	1
1-41	ZS720900	Screw, Pan Head (W/Washer)	3C40014G04	5
1-42	BL720911	Slide Lever Comp. CR-83D	1V41200J68	1
1-43	ZG720922	Rec. Spring. CR-83D	41C41254J01	1
1-44	ED224548	Silicon Diode 10D2	42-2-14	1
1-45	MZ677788	Rec. Clutch.	EZ-2015	1
1-46	ML677766	Rec. Angle.	EZ-2013	1
1-47	MZ677777	Rec. Board.	EZ-2014	1
1-48	ZG677790	Rec. Spring.	EZ-2016	1
1-49	ZW270101	'E' Ring 3M	6-1-9	7
1-50	ZS417216	Screw, Pan Head 3x4		2
1-51	MZ677801	Change SW. Bracket, W/Slide Pin 3	EZ-2017	1
1-52	MZ677812	Change Slide	EZ-2018	1
1-53	ZG208091	Impedance Arm Spring	RD-269	1
1-54	MZ677597	Change Detector Plate	EZ-1025	1
1-55	ZS432843	Screw, Pan Head 2.6x4		1

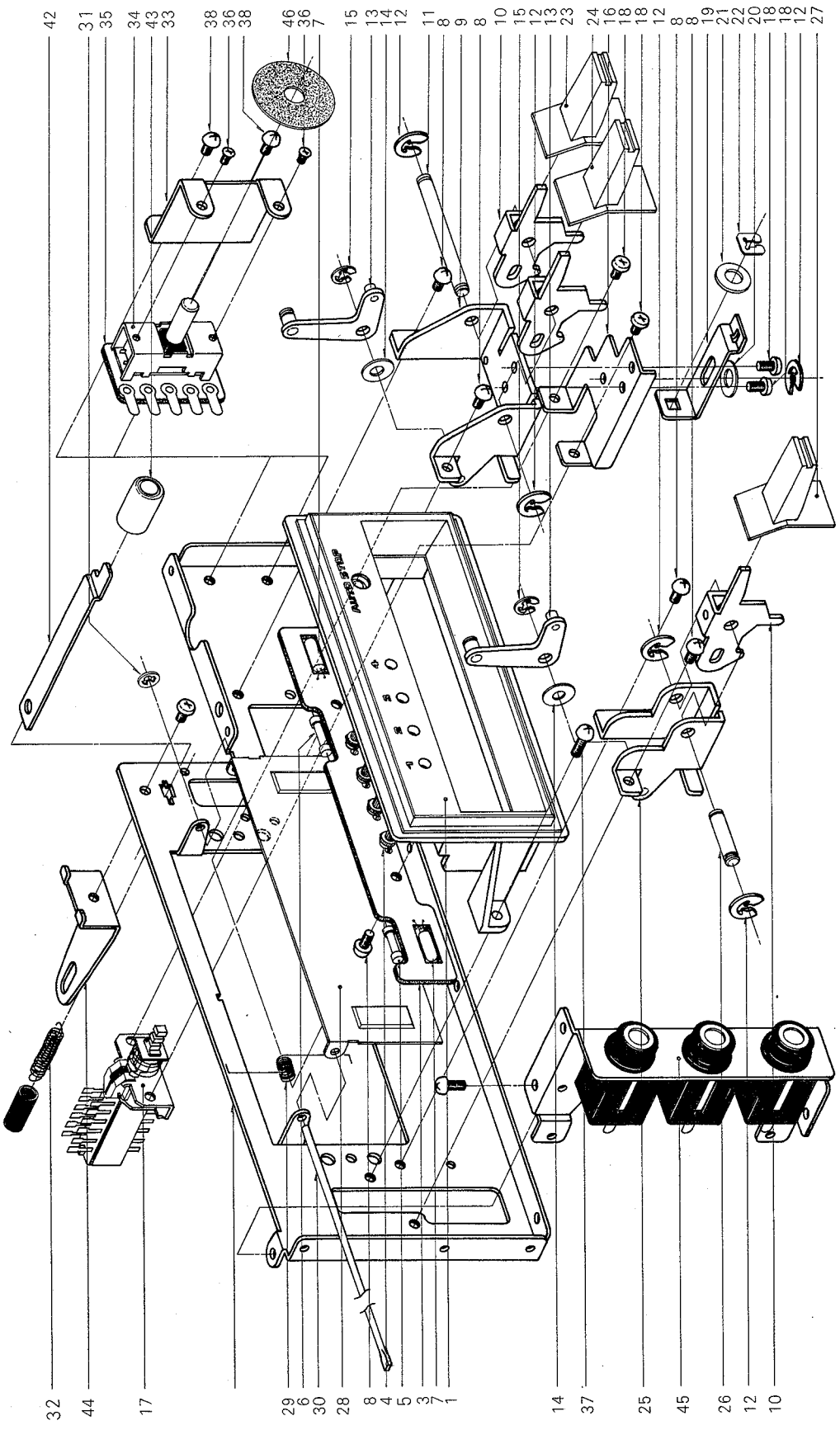
2 ILLUSTRATION OF SPEED REDUCING GEAR BLOCK



2) SPEED REDUCING GEAR BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
2-1	ML677845	Speed Reducing Gear Arm, W/Shaft 1.2 & Bush B	EZ-2021	1
2-2	ML677880	Idler 1	EZ-2025	1
2-3	ZW391397	'E' Ring 1.2M	6-1-9	2
2-4	ZW645952	Washer D2.1x4x0.2t		2
2-5	ML677878	Idler 2	EZ-2024	1
2-6x	ZW270123	'E' Ring 4M	6-1-9	1
2-7	MZ654838	Motor Cushion	CJ-7004	1
2-8	SZ677632	Sleeve	EZ-1030	1
2-9	ZW259571	Washer D3.3x13x1t		1
2-10	ZW273802	Toothed Lock Washer M3		1
2-11	ZW273756	Nut M3, #1		1
2-12	MH677496	Gear Prop, W/Idler Shaft 3	EZ-1015	1
2-13	ZG389970	Circular Plate Lever Spring	CS-0018	1
2-14	EZ677542	Joint, W/Brake Pin	EZ-1020	1
2-15	ML677531	Reset Lever, W/Reverse Lever Pin	EZ-1019	1
2-16	ZW290283	'U' Ring 2.85M	6-1-1	2
2-17	MZ677564	Reset Slide	EZ-1022	1
2-18	ZW290283	'U' Ring 2.85M	6-1-1	2
2-19	ZG394378	Return Spring	CS-2106	1
2-20	ML677520	Button Lever 2, W/Case Holder Pin 2	EZ-1018	1
2-21	ZG451574	Slider Pull Spring	RCC-1207B	1
2-22	MR677610	Counter Operating Pulley	EZ-1027	1
2-23	TR687508	Gear Supporter	EZ-1031	1
2-24	ZS455207	Tapping Screw #2 3x5 (BR)		2
2-25	ZW645952	Washer D2.1x4x0.2t		1
2-26	MC677283	Elapse Counter	9-1-46	1
2-27	MB630404	Detector Belt	CJ-2027	1
2-28	MZ596698	Stopper Pin Tube	TD-2100	1
2-29	ES592964	Leaf SW. BSW-IF TX	25-10-18	1
2-30	ZS455207	Tapping Screw #2 3x5 (BR)		2

3 ILLUSTRATION OF MECHA ASSEMBLY BLOCK



3) MECHA ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
3-1	MZ677823	Mouth W/Lamp Lens B-3	EZ-2019	1
3-2x	SE639707	Lamp Lens B-3	NE-6005	1
3-3	EA677834	Lamp P.C. Board A	EZ-2020	1
3-4	ED645996	LED SEL-303E	45-15-6	4
3-5	ER372093	Metal Oxide Film/R. 1W 330 ohms(K)	35-15-10	1
3-6	ER672210	Metal Oxide Film/R. 1W 1.5K(J)	35-15-17	1
3-7	EL603268	Lamp (L/T) 24V 35mA	28-2-39	2
3-8	ZS455207	Tapping Screw #2 3x5 (BR)		10
3-9	MZ677711	Key Bracket B W/Slide Pin	EZ-2008	1
3-10	MZ677687	Key	EZ-2005	3
3-11	MS677722	Key Shaft B	EZ-2009	1
3-12	ZW290283	'U' Ring 2.85M	6-1-1	4
3-13	ML677698	Key Lever W/Lever Pin & Pause Pin	EZ-2006	2
3-14	ZW420682	Washer (Nylon) D4.2x9x0.5T		2
3-15	ZW270201	'E' Ring 3M	6-1-9	5
3-16	MZ677733	F.F Bracket W/Slide Pin 3	EZ-2010	1
3-17	ES677351	Push Sw. SUE12	25-5-205	1
3-18	ZS417216	Screw, Pan Head 3x4		2
3-19	MZ677744	F.F. Slide	EZ-2011	1
3-20	ZW376380	Washer (Polyslider) D5.1x10.3x0.13T		1
3-21	ZW259986	Washer (Nylon) D5.1x10.3x1T		1
3-22	ZW687521	Square Ring	6-1-16	1
3-23	ML645377	Function Lever C	CA-2046	1
3-24	ML645333	Function Lever E	CA-2046	1
3-25	MZ677665	Key Bracket A W/Slide Pin	EZ-2003	1
3-26	MS677676	Key Shaft A	EZ-2004	1
3-27	ML645322	Function Lever D	CA-2046	1
3-28	MZ677430	Shutter	EZ-1008	1
3-29	ZG677441	Shutter Spring	EZ-1009	1
3-30	MZ677452	Shutter Spoke	EZ-1010	1
3-31	ZW340648	Clip (CS Type) CSTW-2	6-1-14	1
3-32	ZG392804	Auto. Change Lever E Return Spring	CS-2566	1
3-33	MZ677463	Switch Bracket	EZ-1011	1
3-34	ES677305	Lever Sw. SLE54305	25-12-24	1
3-35	EA677474	Selector P.C. Board	EZ-1012	1
3-36	ZS430413	Screw, Countersunk Head 2.6x4		2
3-37	ZS447840	Tapping Screw #2 3x8 (BR)		2
3-38	ZS325495	Tapping Screw #2 3x6 (BR)		4
3-39x	EZ624047	Cord Retainer	2-7-48	1
3-40x	ZS462925	Tapping Screw #2 4x8 (BR)		6
3-41x	ZW394086	Washer (Nylon) D4.1x7x1T		1
3-42	ML677575	Button Lever 1	EZ-1023	1
3-43	SK631304	Push Button Knob 1 2-9-158	91-5051	1
3-44	MS677586	Button Lever Guide	EZ-1024	1
3-45	EJ677294	3-Throw Jack	31-2-71	1
3-46	MZ677957	Shadow Mask	EZ-6006	1

4) P.C. BOARDS

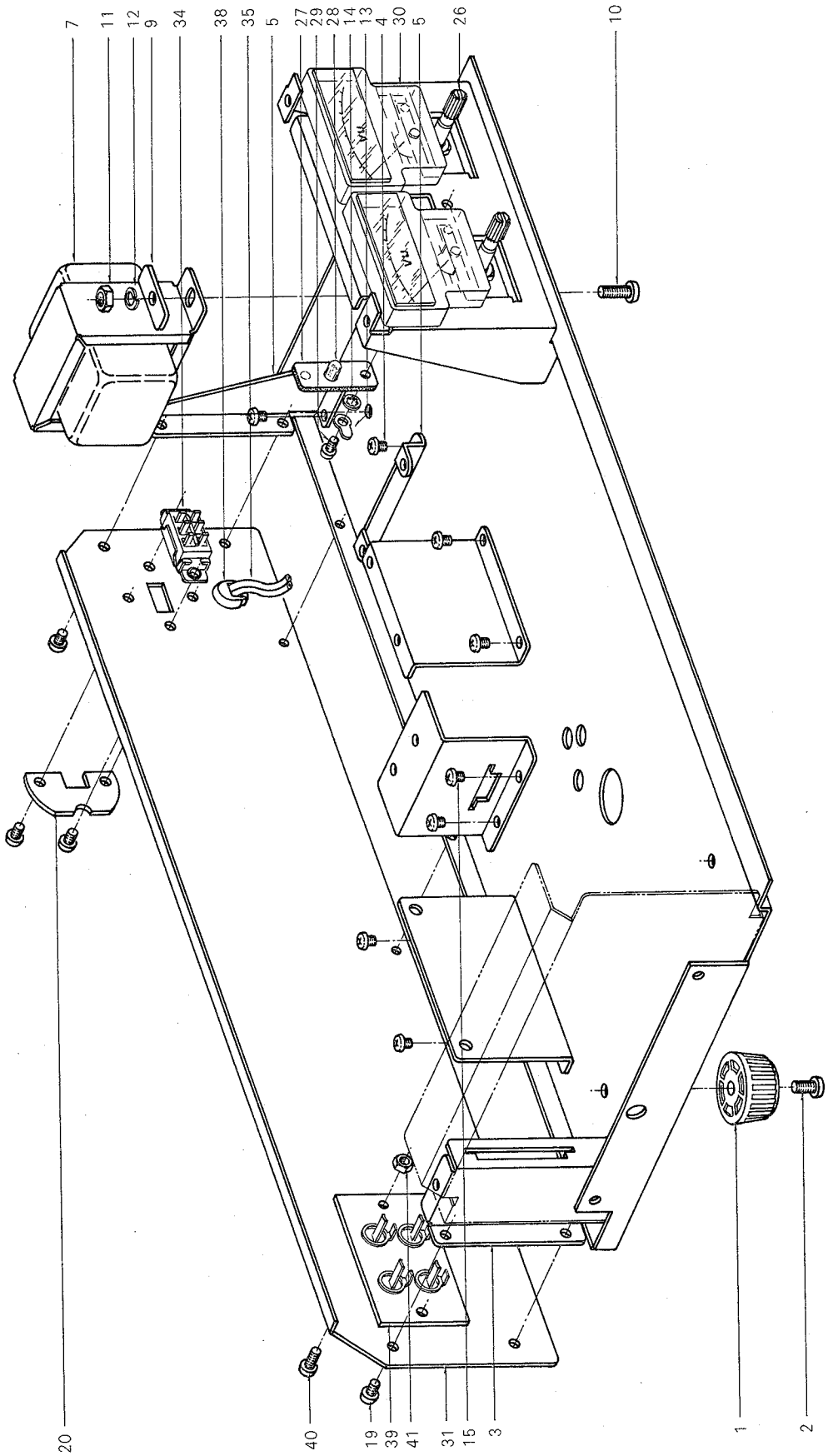
(1) AMP P.C BOARD (EZ-2030) BLOCK

Symbol No.	Parts No.	Description	Q'ty
(1)-1	BA680152	Amp P.C. Board Comp	1
(1)-TR1,2	ET391768	Transistor 2SC458LG(C)(D)	4
(1)-TR3,4	ET453486	Transistor 2SC711(E)(F)	4
(1)-TR5,6	ET639437	Transsistor 2SC945L(Q)(P)	4
(1)-D1	ED219464	Germanium Diode 1N34A	2
(1)-L1	EO379923	Ferri Inductor FL7H 8.2MH(J)	2
(1)-L2	EO308395	Ferri Inductor FL7H 3MH(J)	2
(1)-L3,4	EO244001	Ferri Inductor FL9H 1 ohm(J)	4
(1)-VR1	EV522797	Semi-Fixed/Vol. V8K4-1 20KB	2
(1)-VR2	EV464196	Semi-Fixed/Vol. V8K4-1 2KB	2
(1)-T1	BT620392	Headphone Trans. S14-1235	2
(1)-SW1	ES496642	Slide Sw. CL106B (CL162A25)	2
		Capacitors	
(1)-C9	EC513955	Styrol/C. (VERT. TYPE) 220PF(J)50WV	2
(1)-C13	EC676877	Styrol/C. (VERT. TYPE) 680PF(K)50WV	2
(1)-C17	EC672287	Styrol/C. (VERT. TYPE) 510PF(J)50WV	2
(1)-C26	EC663726	Styrol/C. (VERT. TYPE) 330PF(J)50WV	2
(1)-C25	EC514001	Styrol/C. (VERT. TYPE) 390PF(J)50WV	2

(2) POWER SUPPLY & OSC P.C BOARD (EZ-2020) BLOCK

Symbol No.	Parts No.	Description	Q'ty
(2)-1	BA680106	Power Supply & Osc P.C Board Comp.	1
(2)-TR1 to 4	ET639437	Transistor 2SC945L(Q)(P)	4
(2)-TR6 to 8	ET639437	Transistor 2SC945L(Q)(P)	3
(2)-D1 to 8	ED560913	Silicon Diode 1S2473 VE	8
(2)-D9	ED554027	Zener Diode YZ-240(B)	1
(2)-D10	ED227812	Zener Diode WZ-145	1
(2)-D11	ED560913	Silicon Diode 1S2473 VE	1
(2)-D12 to 14	ED224526	Silicon Diode 10 D1	3
(2)-R16	ER372093	Metal Oxide Film/R. 1W330 ohm(K)	1
(2)-R19	ER672208	Metal Oxide Film/R.1W1.5K(J)	1
(2)-R23	ER687510	Cement/R. (METAL OX. FILM/T) 2W 180 ohm(J)	1
(2)-T1	ED383365	Osc. Coil 0T-204	1
(2)-T2	BT517274	Headphone Trans. N16-535S	1
(2)-2	EJ514822	Fuse Holder S-N5051	2
(2)-3	MZ668035	Heat-Simk Plate B	1
(2)-TR5	ET635815	Transistor 2SC1449(K)(L)(M)	1
(2)-TR9,10	ET635815	Transistor 2SC1449(K)(L)(M)	2
(2)-4	ZS379350	Screw, Pan Head 3x6	2
(2)-5	ZS421806	Screw, Pan Head 3x8	3
(2)-6	ZW699276	Washer D3.3x6x0.5T	3
(2)-7	ZW273756	Nut M3, #1	3
(2)-8	EF371698	Fuse ST-4 0.5A	1
(2)-C3	EC536894	Plastic Film/C. 3600PF(J) 500WV	1

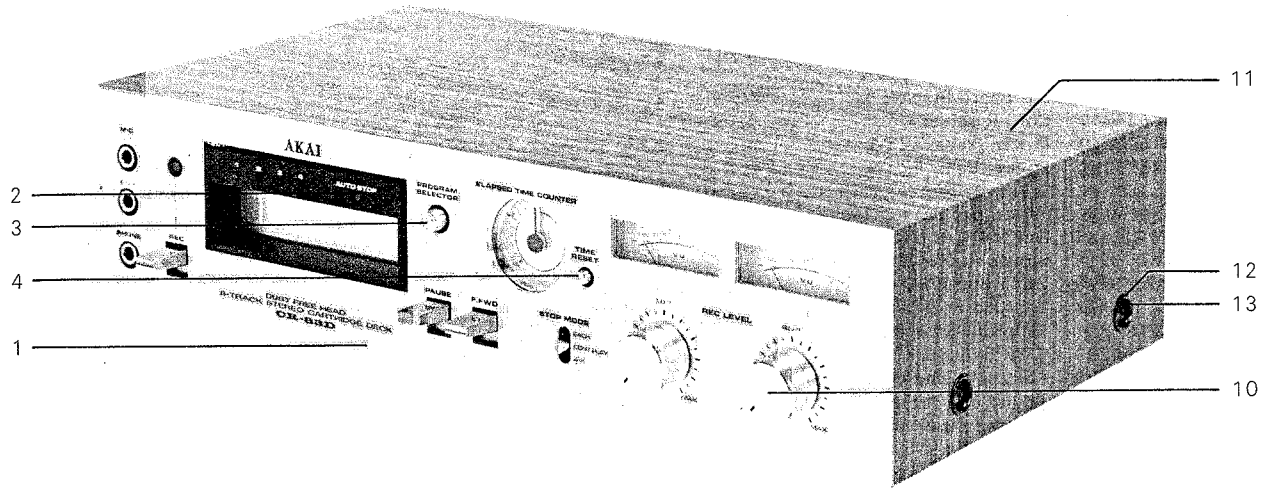
5 ILLUSTRATION OF ASSEMBLY BLOCK



5) ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
5-1	SZ645243	Circular Foot A, w/rubber	CA-6014	4
5-2	ZS428308	Tapping Screw #2 4x12(Bind)		4
5-3	MZ677373	P.C Board Bracket 1	EZ-1002	1
5-4	ZS417216	Screw, pan head 3x4		25
5-5	MZ677406	P.C Board Bracket 3	EZ-1005	2
5-6x	EZ624047	Cord Retainer	2-7-48	4
5-7	BT677250	Power Trans. EZT-1	38-4-404	1
5-8x	BT677261	Power Trans. EZT-2	38-4-405	1
5-9	EZ486617	Trans. Reinforcement Plate B	LF-5222	2
5-10	ZS424056	Screw, pan head 4x10		2
5-11	ZW413188	Nut M4 #1		2
5-12	ZW273914	Spring Washer M4		2
5-13	ZW562476	Earth Lug M3		2
5-14	ZW273802	Toothed Lock Washer M3		2
5-15	ZS455207	Tapping Screw #2 3x5(BR)		7
5-16x	ZW290283	'U' Ring 1.85M	6-1-1	1
5-17x	ZW659193	Adjust, Washer D4.5x10x0.5t		4
5-18x	ZW659158	Adjust, Washer D4.5x10x0.25t		2
5-19	ZS447761	Tapping Screw #2 3x6(BR) (Black)		7
5-20	TC613697	Volt Indication Plate	CW-5018	1
5-21x	MT553948	Wire Band B-100	2-35-3	4
5-22x	ED672232	Thermister PTH62BD 3R3M	45-14-5	1
5-23x	EJ351944	Lug Plate KPL2	33-3-28	1
5-24x	ZS422076	Screw, pan head 3x5		1
5-25x	EJ654221	Lug Plate KPL4L	33-3-26	1
5-26	EV677316	Vol. VM10A004 50 kA	36-6-19	2
5-27	EA677654	Lamp P.C Board B	EZ-2002	1
5-28	EL621167	Lamp (L/T) 5.5V 60MA	28-2-36	1
5-29	ES325495	Tapping Screw #2 3x6(BR)		1
5-30	EM677327	VU Meter 85C257	46-1-121	2
5-31	SP677970	Rear Panal A	EZ-6008	1
5-32x	SP677992	Rear Panel C (CSA)	EZ-6008	1
5-33x	SP677981	Rear Panel B (JPN)	EZ-6008	1
5-34	ES479485	Slide SW. S-1	25-3-66	1
5-35	EW540123	AC Cord (CUL) 2.5M	26-3-20	1
5-36x	EW524845	AC Cord (J) 2.5M (JPN)	26-3-31	1
5-37x	EW207742	AC Cord CUL (CSA)	26-3-45	1
5-38	EZ631945	Strain Relief SR-4N-4	2-7-49	1
5-39	EJ677340	Jack Plate	EZ-1028	1
5-40	ZS421806	Screw, pan head 3x8		2
5-41	ZW273756	Nut M3 #1		2

6 PHOTO OF FINAL ASSEMBLY BLOCK



6) FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
6-1	BZ680207	Front Panel Block Comp. CR-83D		1
6-2	SF612055	Lamp Lens A	CH-6314	1
6-3	SF613888	Button Escutcheon A	CW-6021	1
6-4	SF631585	Button Escutcheon D	CG-6814	1
6-5x	MZ677924	Shadow Mask A	EZ-6003	2
6-6x	MZ677935	Shadow Mask B	EZ-6004	1
6-7x	MZ677946	Shadow Mask C	EZ-6005	1
6-8x	ZS325495	Tapping Screw #2 3x6(BR)		6
6-9x	ZW659193	Adjust. Washer D4.5x10x0.5t	MY-6208	2
6-10	SK631056	Single Knob	EZ-6007	2
6-11	BC677968	Case 1	MU-6028	1
6-12	ZW548010	Stop Facing Washer		4
6-13	ZS201341	Screw, truss head 4x8		4

7. LIST OF INTERCHANGEABLE SEMICONDUCTORS

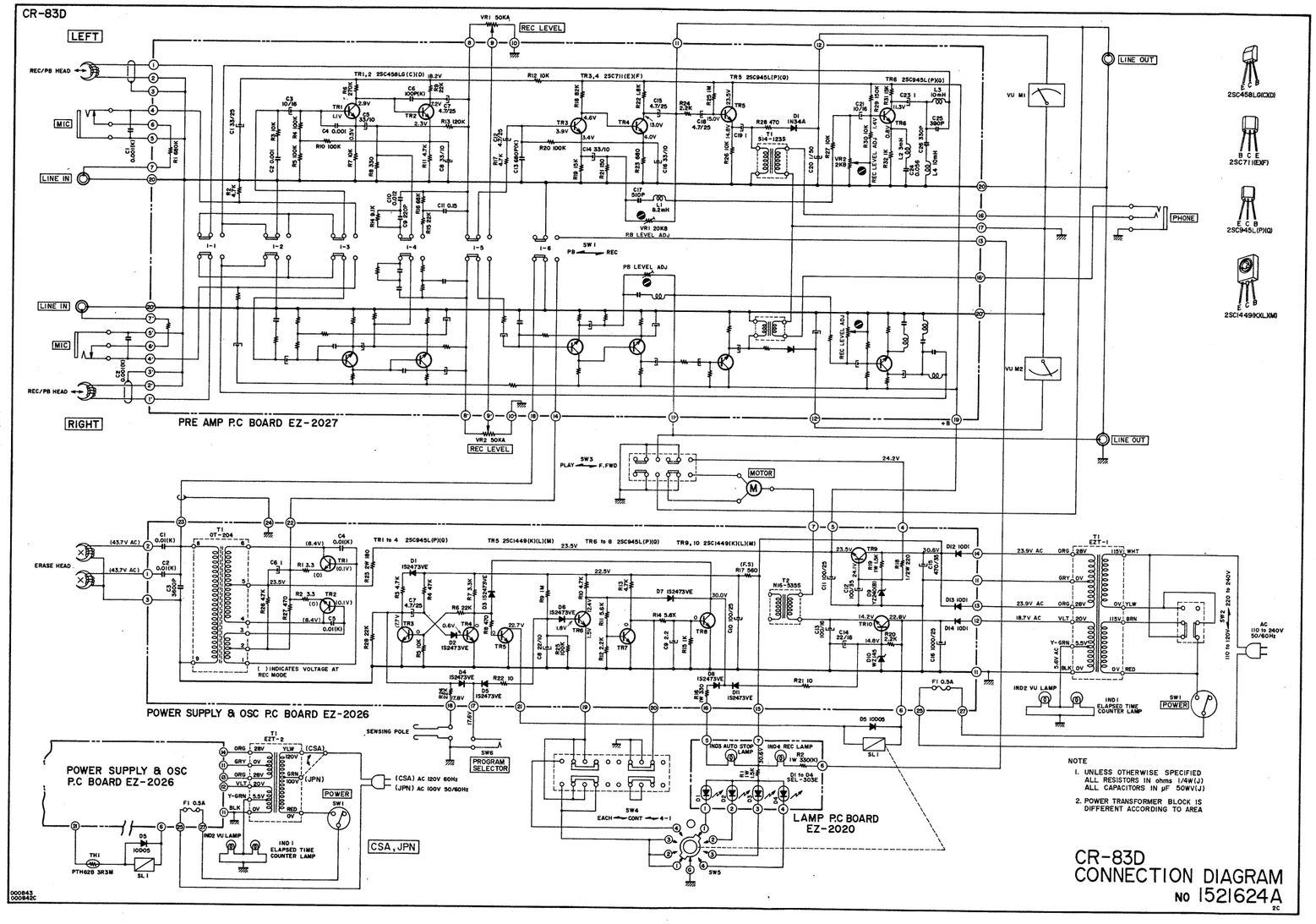
As far as service in concerned, in case the original parts cannot be obtained, the interchangeable parts listed below can be substituted.

Original Parts			Interchangeable Parts	
Description	Parts No.	Utilizing P.C Board	Description	Parts No.
2SC458LG(C)(D)	ET391768	EZ-2027	2SC693U(F) 2SC1312S(G)(H) 2SC458(C)	ET315472 ET603257 ET329218
2SC711(E)(F)	ET453486	EZ-2027	2SC945L(Q)(R) 2SC1647(R)(S)(E) 2SC1641(R)(S)(E)	ET398711 ET623733 ET603843
2SC945L(P)(Q)	ET639437	EZ-2026 EZ-2027	2SC711(E)(F) 2SC1647(R)(S)(E) 2SC1641(R)(S)(E)	ET453486 ET623733 ET603843
2SC1449(K)(L)(M)	ET635815	EZ-2026	2SD360(D)(E) 2SC1096(K)(L)	ET517375 ET471025
1N34A	ED219464	EZ-2027	1S188AM 1N60	ED562386 ED428264
1S2473VE	ED560913	EZ-2026	WG599 1S1588 1S2473 WG713	ED514721 ED557447 ED624903 ED515790
10D1	ED224526	EZ-2026	1N4002	ED511907
10D05	ED494583		1N4001	ED511097
WZ145	ED227812	EZ-2026		
YZ240(B)	ED554027	EZ-2026	WZ240 RD24A	ED511918 ED229072
SEL303E	ED645996	EZ-2020		

INDEX

Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.
BA680152	(1)-1	EZ631945	5-38	ZG720898	1-40				
BA680106	(2)-1	EZ-677542	2-14	ZG720922	1-43				
BC677968	6-11	HR720595	1-11	ZS201341	6-13				
BF720641	1-16	MB630404	2-27	ZS325495	3-38				
BL720720	1-24	MB720876	1-38	ZS325495	5-29				
BL720753	1-27	MC677283	2-26	ZS325495	6-8x				
BL720911	1-42	MH677496	2-12	ZS379350	(2)-4				
BM720786	1-29	MI677878	2-5	ZS417216	1-50				
BT517274	(2)-T2	MT677880	2-2	ZS417216	3-18				
BT620392	(1)-T1	ML645322	3-27	ZS417216	5-4				
BT677250	5-7	ML645333	3-24	ZS421806	(2)-5				
BT677261	5-8x	ML645377	3-23	ZS421806	5-40				
BZ680207	6-1	ML677520	2-20	ZS422076	5-24x				
BZ720516	1-3	ML677531	2-15	ZS424046	5-10				
BZ720527	1-4	ML677575	3-42	ZS428308	5-2				
BZ720540	1-6	ML677698	3-13	ZS430413	3-36				
BZ720551	1-7	ML677766	1-46	ZS432843	1-55				
BZ720584	1-10	ML677845	2-1	ZS447761	5-19				
BZ720630	1-15	MR677610	2-22	ZS447840	3-37				
BZ720797	1-30	MR720663	1-18	ZS455207	2-24				
BZ720832	1-34	MS677586	3-44	ZS455207	2-30				
BZ720887	1-39	MS677676	3-26	ZS455207	3-8				
EA677474	3-35	MS677722	3-11	ZS455207	5-15				
EA677654	5-27	MT553948	5-21x	ZS462925	3-40x				
EA677834	3-3	MZ596698	2-28	ZS720617	1-13				
EC513955	(1)-C9	MZ654838	2-7	ZS720674	1-19				
EC514001	(1)-C25	MZ668035	(2)-3	ZS720742	1-26				
EC536894	(1)-C3	MZ677373	5-3	ZS720810	1-32				
EC663726	(1)-C26	MZ677406	5-5	ZS720821	1-33				
EC672287	(1)-C17	MZ677430	3-28	ZS720854	1-36				
EC676877	(1)-C13	MZ677452	3-30	ZS720900	1-41				
ED219464	(1)-D1	MZ677463	3-33	ZW259571	2-9				
ED224526	(2)-D12to14	MZ677564	2-17	ZW259986	3-21				
ED224548	1-44	MZ677597	1-54	ZW270101	1-49				
ED227812	(2)-D10	MZ677665	3-25	ZW270101	3-15				
ED383365	(2)-T1	MZ677687	3-10	ZW270123	2-6x				
ED554027	(2)-D9	MZ677111	3-9	ZW273756	(2)-7				
ED560913	(2)-D1 to 8	MZ677733	3-16	ZW273756	2-11				
ED560913	(2)-D11	MZ677744	3-19	ZW273756	5-41				
ED645996	3-4	MZ677777	1-47	ZW273802	2-10				
ED672232	5-22x	MZ677788	1-45	ZW273802	5-14				
EF371698	(2)-8	MZ677801	1-51	ZW273914	5-12				
EJ351944	5-23x	MZ677812	1-52	ZW290283	2-16				
EJ514822	(2)-2	MZ677823	3-1	ZW290283	2-18				
EJ654221	5-25x	MZ677924	6-5x	ZW290283	3-12				
EJ677294	3-45	MZ677935	6-6x	ZW290283	5-16x				
EJ677340	5-39	MZ677946	6-7x	ZW340648	3-31				
EL603268	3-7	MZ677957	3-46	ZW376380	3-20				
EL621167	5-28	SE639707	3-2x	ZW391397	2-3				
EM677327	5-30	SF612055	6-2	ZW394086	3-41x				
EO244001	(1)-L3,4	SF613888	6-3	ZW413188	5-11				
EO308395	(1)-L2	SF631585	6-4	ZW420682	3-14				
EO379923	(1)-L1	SK631056	6-10	ZW548010	6-12				
ER372093	(2)-R16	SK631304	3-43	ZW562476	5-13				
ER372093	3-5	SP677970	5-31	ZW645952	2-4				
ER672208	(2)-R19	SP677981	5-33x	ZW645952	2-25				
ER672210	3-6	SP677992	5-32x	ZW659158	5-18x				
ER687510	(2)-R23	SZ645243	5-1	ZW659193	5-17x				
ES479485	5-34	SZ677632	2-8	ZW659193	6-9x				
ES496642	(1)-SW1	TC613697	5-20	ZW687521	3-22				
ES592964	2-29	TR687508	2-23	ZW699276	(2)-6				
ES677305	3-34	TR720685	1-20	ZW720573	1-9				
ES677351	3-17	TR720707	1-22	ZW720652	1-17				
ES720808	1-31	TR720731	1-25	ZW720696	1-21				
ET391768	(1)-TR1,2	TR720843	1-35	EW720865	1-37				
ET453486	(1)-TR3,4	ZG208091	1-53						
ET635815	(2)-TR5	ZG389970	2-13						
ET635815	(2)-TR9,10	ZG392804	3-32						
ET639437	(1)-TR5,6	ZG394378	2-19						
ET639437	(2)-TR1 to 4	ZG451574	2-21						
ET639437	(2)-TR6 to 8	ZG677441	3-29						
EV464196	(1)-VR2	ZG677790	1-48						
EV522797	(1)-VR1	ZG720494	1-1x						
EV677316	5-26	ZG720505	1-2x						
EW207742	5-37x	ZG720538	1-5x						
EW524845	5-36x	ZG720562	1-8						
EW540123	5-35	ZG720606	1-12						
EZ486617	5-9	ZG720628	1-14x						
EZ624047	3-39x	ZG720718	1-23						
EZ624047	5-6x	ZG720775	1-28						

CR-83D



NOTE

1. UNLESS OTHERWISE SPECIFIED
   ALL RESISTORS IN ohms 1/4W(J)
   ALL CAPACITORS IN μF 50WV(J)
2. POWER TRANSFORMER BLOCK IS DIFFERENT ACCORDING TO AREA

CR-83D CONNECTION DIAGRAM

No 1521624A

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